



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/831,449	08/13/2001	James Lucas	3552-0107P	4275
2292	7590	02/09/2006	EXAMINER	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			CHORBAJI, MONZER R	
			ART UNIT	PAPER NUMBER
			1744	

DATE MAILED: 02/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/831,449

Applicant(s)

LUCAS ET AL.

Examiner

MONZER R. CHORBAJI

Art Unit

1744

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 November 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 48-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 48-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 December 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This final action is in response to the communication received on 11/23/2005

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

2. The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 48-55, 59-60, 62-64, 66, 70, 74 and 77-79 are rejected under 35 U.S.C. 102(e) as being anticipated by Bailey et al (U.S.P.N. 6,028,315).

With respect to claims 48, 77 and 79, the Bailey reference discloses an apparatus (figure 5) and a method for sterilizing surfaces of a container, which is made up of glass substance or plastic substance (col.1, lines 3-6) including the following: UV lamp (figure 1, 4) within an enclosure (figure 5, 111), a microwave energy source for exciting the lamp (figure 5, 104) and an enclosure that is optically transparent waveguide (figure 5, 111 and col.6, lines 55-58) and wholly surrounds the UV lamp. The

Art Unit: 1744

feature "wholly surrounding the ultraviolet" does not exclude the waveguide as having holes or openings as long as it completely surrounds the lamp. The enclosure (figure 5, 111) wholly surrounds the UV lamp.

With respect to claims 49-55, 59-60, 62-64, 66, 70, 74 and 78, the Bailey reference teaches the following: UV lamp has no electrode (col.5, lines 6-7), element in the vapor form (col.5, lines 56-57), mercury (col.5, line 58), a dominant wavelength from 200 nm to 280 nm (col.3, lines 7-9), the waveguide controls the flow of microwave energy from the enclosure (the walls of the waveguide 111 are made of quartz material as taught in col.5, lines 55-58 that inherently controls the flow of microwave energy), the waveguide blocks the flow of microwave energy from the enclosure (in figure 5, the bottom portion of walls 111 in touch with column 110 blocks microwave energy), the enclosure includes quartz or a UV-transparent plastic material (col.5, lines 55-56), the UV lamp has an elongated form (figure 2, 18), the waveguide has a cylindrical form (figure 5, 111), a magnetron (figure 5, 104), a pathguide to guide the microwave energy from the microwave energy source to the UV lamp (figure 2, unlabeled arrow in 24 from 14 to 18), the pathguide defines linear path (figure 2, 24 is linear path), the UV light source includes a housing for the enclosure (figure 5, 107), the UV light source is for sterilizing surfaces of a container, which is made up of glass substance or plastic substance (col.1, lines 3-6) and the UV light source is for killing bacteria on the surface of goods (col.1, lines 4-6, surfaces of containers include bacteria).

Claim Rejections - 35 USC § 103

Art Unit: 1744

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 56-58, 65, 67, 72 and 80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (U.S.P.N. 6,028,315) as applied to claims 48, 77, 79 and further in view of Spero et al (U.S.P.N. 3,911,318).

The teachings of the Bailey reference have previously been set forth with respect to claims 48-55, 59-60, 62-64, 66, 70, 74 and 77-79; however, regarding claims 56-58, 65, 67, 72 and 80, the Bailey reference fails to teach the following: the waveguide includes a conducting material, the waveguide includes a conducting mesh, which is made from copper, a non-linear path, housing has an inlet and an outlet and shaped to guide fluid flow from inlet past the enclosure to the outlet, fluid is water and the UV light source is for curing glues and inks. The Spero reference, which is in the art of exciting UV lamp by a microwave generator for irradiating fluids, teaches the following: the waveguide includes a conducting material (figure 2, 25 and col.9, lines 24-31), the waveguide includes a conducting mesh (figure 2, 25), which is made from copper (col.9, line 27), a non-linear path (figure 4, 10, 61, 62 and col.12, lines 6-10), housing has an inlet and an outlet and shaped to guide fluid flow from inlet past the enclosure to the outlet (figure 5, 79 and 72) and the UV light source is for known to be used for curing inks (col.3, lines 30-31). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the method and apparatus of the Bailey reference by surrounding the waveguide with a copper mesh as taught by the Spero reference since the copper mesh serves to prevent microwave radiation leakage outside its cylindrical volume (col.9, lines 27-29).

8. Claim 61 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (U.S.P.N. 6,028,315) as applied to claim 48 and further in view of Son et al (U.S.P.N. 4,073,770).

The teachings of the Bailey reference have previously been set forth with respect to claims 48-55, 59-60, 62-64, 66, 70, 74 and 77-79; however, regarding claim 61, fails to explicitly disclose the operating temperature of the UV lamp. The Son reference, which is in the art of irradiating compounds with UV source, teaches that the operating temperature is 60 degrees Celsius. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of the Bailey reference by operating the UV lamp at such a temperature in order to prevent the overheating of the containers to be treated.

9. Claims 68, 71 and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (U.S.P.N. 6,028,315) as applied to claim 48 and further in view of Wang (U.S.P.N. 6,135,838).

The teachings of the Bailey reference have previously been set forth with respect to claims 48-55, 59-60, 62-64, 66, 70, 74 and 77-79; however, regarding claims 68, 71 and 75, the Bailey reference fails to teach irradiating air or placing the UV lamp in an air conditioning system. The Wang reference, which is in the art cleaning air by using UV light, teaches placing UV lamp within the air conduit of an air conditioner (col.11, lines 32-33). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of the Bailey reference by placing UV lamp within an air conditioner as taught by the Wang reference in order to improve the efficiency of air treatment by utilizing the convection means of the air conditioner (col.11, lines 34-36).

10. Claim 69 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (U.S.P.N. 6,028,315) as applied to claim 48 and further in view of Spero et al (U.S.P.N. 3,911,318) and Ressler et al (U.S.P.N. 5,626,768).

The teachings of the Bailey reference have previously been set forth with respect to claims 48-55, 59-60, 62-64, 66, 70, 74 and 77-79; however, regarding claim 69, both the Bailey reference and the Spero reference fail to teach the use of a pump. The Ressler reference, which is in the art of sterilizing liquids using UV light, teaches the use of a pump (figure 1, 15). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of the Bailey reference by including a pump as taught by the Ressler reference in order to control the velocity of the fluid treated past the UV source (col.4, lines 43-44).

11. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (U.S.P.N. 6,028,315) as applied to claim 48 and further in view of Macklin et al (U.S.P.N. 4,504,955).

The teachings of the Bailey reference have previously been set forth with respect to claims 48-55, 59-60, 62-64, 66, 70, 74 and 77-79; however, regarding claim 73, the Bailey reference fails to teach using UV light to erase eproms. The Macklin reference teaches that it is known to use UV light to erase eproms (col.3, lines 15-17). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of the Bailey reference by irradiating eproms as taught by the Macklin reference since eproms erasing can occur over a few seconds (col.9, lines 40-41).

Art Unit: 1744

12. Claim 76 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bailey et al (U.S.P.N. 6,028,315) as applied to claim 48 and further in view of Shie et al (U.S.P.N. 6,166,389).

The teachings of the Bailey reference have previously been set forth with respect to claims 48-55, 59-60, 62-64, 66, 70, 74 and 77-79; however, regarding claim 76, the Bailey reference fails to teach using UV light in a high intensity lighting system. The Shie reference, which is in the lighting art, teaches using UV light in a high intensity lighting system (col.10, lines 21-22). Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus of the Bailey reference by using UV lamps in high intensity lighting systems as taught by the Shie reference in order to distribute the light transmission throughout the electromagnetic spectrum (col.3, lines 34-36).

Response to Arguments

13. Applicant's arguments filed on 11/23/2005 have been fully considered but they are not persuasive.

On page 4 of the Remarks section, applicant argues that, "In other words, Bailey's sealed unit 111 is simply an ultraviolet lamp (i.e. a sealed unit containing gas or plasma, which, when excited, emits ultraviolet light), but not a waveguide as claimed to guide the microwave energy originating from a microwave energy source to an ultraviolet lamp. It is clear that the sealed unit 111 is the UV lamp itself and there is no other UV lamp within the sealed unit 111. In addition, FIG.5 also clearly shows that there is no any other UV lamp within the sealed unit 111" The examiner disagrees. In

Art Unit: 1744

col.5, lines 45-60, the Bailey reference teaches a hollow column (110) that includes sealed unit (111) that allows microwaves generated from magnetron source (104) to pass through it and to excite the gas or plasma contained within it so that UV light is emitted through it. Furthermore, in col.6, lines 44-46, the Bailey reference teaches that the Source of UV light can alternatively be a mercury lamp. Thus, in that embodiment, the hollow column includes a UV lamp where the hollow column allows, i.e., guides the microwaves from the magnetron source (104) to pass through it and excite the mercury gas within the lamp. In this embodiment, the hollow column (110) is a waveguide. In addition, figure 3 shows unlabeled waveguide that wholly surrounds UV bulb (18). This unlabeled structure guides microwave energy (26) through its elongate extension or shaft (24) to the UV bulb (18). See col.3, lines 47-67 and col.4, lines 1-20.

On page 4 of the Remarks section, applicant argues that, "In fact, the sealed unit 111 simply let the microwaves pass through without providing guiding function." The examiner disagrees. The disclosure, for example, teaches that "guiding microwaves" is equivalent to the walls of enclosure 20 in figure 1 as being transparent to UV radiation. See page 4 of the specification. Also, see page 5. Clearly, as explained above, the hollow column (110) of the Bailey reference functions as a waveguide.

The Terminal Disclaimer filed on 11/23/2005 has been entered and accepted. Therefore, the double patenting rejection cited in the action dated 08/25/2005 has been withdrawn.

Conclusion

14. THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

15. A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **MONZER R. CHORBAJI** whose telephone number is (571) 272-1271. The examiner can normally be reached on M-F 6:30-3:00.

17. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **RICHARD D. CRISPINO** can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1744

18. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Monzer R. Chorbaji
Patent Examiner
AU 1744
02/05/2006

Handwritten signature of Monzer R. Chorbaji, consisting of the letters 'MRC' in a stylized, cursive font.Handwritten signature of Richard Crispino, written in a cursive script.

RICHARD CRISPINO
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700